

10th International Conference on Hand-Arm Vibration

7-11 June 2004

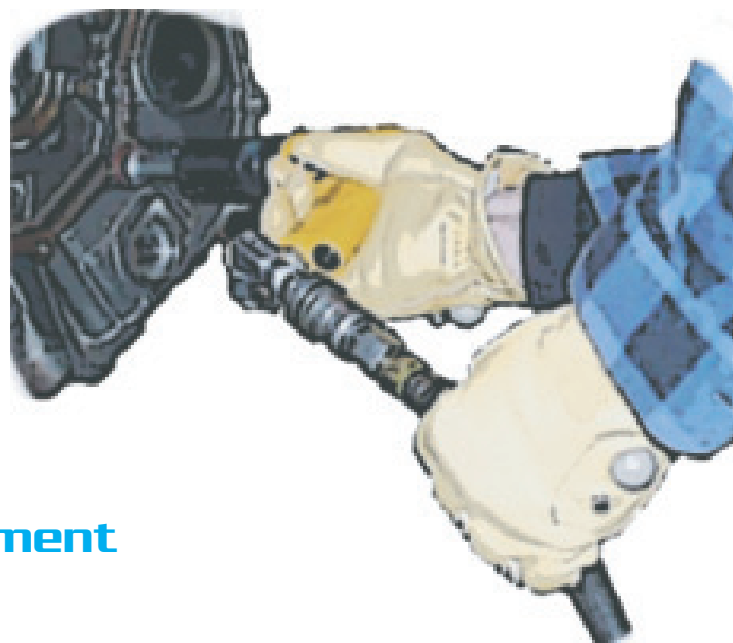
Las Vegas, Nevada, USA

Sponsored by:

Center for Mechanical & Environmental Systems Technology
University of Nevada, Las Vegas

US National Institute for Occupational Safety and Health

International Advisory Committee of International Conference
on Hand-Arm Vibration



Final Announcement

Welcome to Las Vegas, the entertainment capital of the world:

The 10th International Hand-Arm Vibration Conference will be the second time this international conference has been hosted in the US. The first was the 2nd International Hand-Arm Vibration Conference, which was held in Cincinnati, Ohio, in 1975.

Hand-arm vibration syndrome (HAVS) was first identified in the US in the small Midwestern town of Bedford, Indiana, in 1918. Dr. Alice Hamilton, the first American physician to devote her life to the practice of industrial medicine, was summoned to Bedford at the request of limestone quarry cutters and carvers who used pneumatic hammers and other similar tools. After daily use of their tools, these workers complained of tingling and/or numbness in their fingers (paraesthesia) often followed by painful attacks of finger blanching. The finger blanching increased in severity and duration with increased exposure to hand-induced vibration from their tools. Dr. Hamilton's study in 1918 was one of the first to establish a relationship between Raynaud's Phenomenon (of occupational origin) and the use of vibrating hand-held tools.

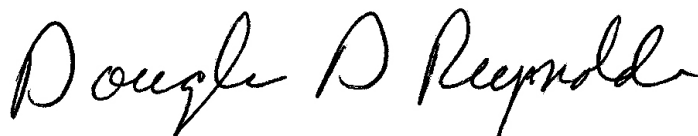
Dr. William Taylor hosted the 1st International Hand-Arm Vibration Conference in Dundee, Scotland, in 1972. He wanted to establish an international forum to publicly present and discuss the results of research that addressed the medical, epidemiological, engineering, and legal aspects of HAVS. Since then, international conferences have been held in Cincinnati (1975), Ottawa (1981), Helsinki (1985), Kanazawa (1989), Bonn (1992), Prague (1995), Umea (1998), and Nancy (2001). All of these conferences have significantly contributed to the body of knowledge and public awareness of the many issues related to HAVS. The published proceedings from these conferences have become blueprints for assessing the prevalence of HAVS in worker populations, for developing national and international standards related to hand-arm vibration, and for developing ergonomic and engineering strategies for reducing the number of cases of HAVS in worker populations.

Research results presented at previous international hand-arm vibration conferences have significantly enhanced our understanding of the medical, epidemiological, and engineering aspects of hand-arm and hand tool vibration. This understanding has been essential to the development of strategies for reducing worker exposure to hand-transmitted vibration and for decreasing the prevalence of HAVS in worker populations. However, much work still remains. We hope to continue this tradition of knowledge transfer at the 10th International Hand-Arm Vibration Conference in Las Vegas.

The upcoming conference will run for five days instead of the usual four. During this time, there will be fourteen technical sessions devoted to presenting the results of research from researchers around the world. As a means of hopefully attracting more tool manufacturers and other practitioners in fields related to hand-arm and hand tool vibration to the conference, there will be four tutorial sessions. These sessions will be designed to educate practitioners in areas related to the medical, ergonomic, testing, engineering, and legal aspects of HAVS.

On behalf of the Local Committee, the International Advisory Committee, and others who will assist in sponsoring the 10th International Hand-Arm Vibration Conference, I wish to extend to you a cordial invitation to come to Las Vegas in June 2004.

I look forward to seeing you in Las Vegas in 2004

A handwritten signature in black ink, reading "Douglas D. Reynolds". The signature is fluid and cursive, with the first name "Douglas" and last name "Reynolds" clearly legible.

Douglas D. Reynolds, Ph.D.
Chair of the International Advisory Committee

Conference Organizer

Center for Mechanical & Environmental Systems Technology (CMEST)
University of Nevada, Las Vegas

Local Committee

Douglas D. Reynolds, Chair
Tony Brammer
Martin Cherniak
Ren Dong
Tom Jetzer
Linda Reynolds
Donald Wasserman
Jack Wasserman

International Advisory Committee

Makoto ARIIZUMI, Japan
Massimo BOVENZI, Italy
Antony BRAMMER, Canada
Eberhard CHRIST, Germany
Patrice DONATI, France
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Makoto FUTATSUKA, Japan
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Ronnie LUNDSTROM, Sweden
Bernard MARTIN, U.S.A.
Illmari PYYKKO, Finland
Douglas REYNOLDS, U.S.A.
Maeda SETSUO, Japan
Jukka STARCK, Finland

Place and Date

Flamingo Hilton Hotel & Casino, Las Vegas, Nevada, USA
7-11 June, 2004

Conference Secretariat

Scientific Secretariat:

Douglas REYNOLDS
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Registration:

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3939 Briarcrest Court
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Preliminary Conference Program

Monday

8:00 - 9:30 AM Registration

9:30 - 10:15 AM Opening Ceremony

10:30 - 12:30 AM Medical I – Focus Session

1. The Relationship Between the Stockholm Scale and Clinical Neurological Tests in the Assessment of the Sensorineural Component of Hand-Arm Vibration Syndrome; House, R., Wills, M. and Lander, L.
2. Risks of Occupational Exposures to Hand-transmitted Vibrations: VIBRISKS; Griffin, M., Bovenzi, M., Lemerle, P. and Lundstrom, R.
3. Questions and Tests Useful in the Diagnosis of HAVS; Mason, H. Elms, J. and Poole, K.

12:30 - 2:00 PM Lunch

2:00 - 3:30 PM Medical II – Epidemiology 1 – Cross-Sectional Studies

1. Disability in the Upper Extremity and Quality of Life in Hard-Arm Vibration Syndrome; Poole, K. and Mason, H.
2. Neurological, Vascular and Musculoskeletal Symptoms in Hands, Fingers and Upper Extremities Among Drivers of Terrain Vehicles; Astrom, C., Rehn, B., Larsson, L., Lundstrom, R., Nilsson, T. and Sundelin, G.
3. Hand-Arm Vibration Syndrome Among Quarry Workers in Vietnam; Futatsuka, M., Shono, M., Sakakibara, H. and Quan, P.Q.
4. Relation Between Hand-Arm Vibration Exposure and Symptoms Among Workers Within a Heavy-Engineering Production Workshop; Burstrom, L, Hagberg, M., Lundstrom, R. and Nilsson, T.

3:30 - 4:00 PM Break

4:00 - 5:50 PM Medical III – Epidemiology 2 – Perspective & Population Studies

1. Prospective Versus Retrospective Incidence of Raynaud's Phenomenon and the Relation to Vibration Exposure; Hagberg, M., Lundstrom, R. and Nilsson, T.
2. A 13 Year Revisit of a Shipyard Characterized by High Levels of Vibration-Induced Disease; Cherniack, M., Morse, T.F., Brammer, A.J., Meyer, J., Neely, G., Nilsson, T., Peterson, D., Toppila, E., Warren, N., Fu, R.W., Bruneau, H. and Croteau, M.
3. A Longitudinal Study of Vibration-Induced White Finger in Compensation Claimants; Bovenzi, M., Vedova, A.D. and Negro, C.
4. Segmental Nerve Conduction Velocity in a Vibration Exposed Population; Cherniack, M., Brammer, A.J., Lundstrom, R., Meyer, J., Morse, T.F., Neely, G. Nilsson, T., Peterson, D., Toppilla, E., Warren, N., Fu, R.W. and Bruneau, H.
5. Effect of Vibration-Induced Peripheral Nerve Injury on Axoplasmic Transport; Yan, J., Matloub, H. S., Sanger, J. R., Zhang, L., and Riley, D. A.

7:30 - 9:30 PM Welcoming Reception

Tuesday

8:00 - 10:30 AM Measurement I – Focus Session

1. Metrics for Hand-Arm Vibration Exposure; Brammer, A.J.
2. Assessing Exposure to Vibration; Nelson, C.
3. Measurement of Hand-Transmitted Vibration Exposures; Maeda, S. and Dong, R.G.
4. Review of HAVS Medical Testing Techniques; Jetzer, T.

10:30 - 11:00 AM Break

11:00 - 12:30 PM Measurement II

1. Modeling and Verification of Influencing Factors in Hand-Arm Vibration Measurements; Gasparetto, M., Moschioni, G., Saggin, M. and Tarabini, M.
2. Developing Measuring Strategies for Unusual Workplaces; Kaulbars, U.
3. Uncertainty in Human Vibration Measurement: Instrumentation and Measurement Issues; Pitts, P.M.
4. Examples of a Measurement Artifact; the 'dc Shift'; Paddan, G.S.

12:30 - 2:00 PM Lunch

2:00 - 3:10 PM Medical IV – Hand-Arm Vibration in Women

1. Reference Values of Vibrotactile Perception Thresholds at the Fingertips for Women; Harazin, B., Kuprowski, J., Lechowska, A.H. and Socholik, V.
2. Work-Related Disorders of the Upper Limb in Female Workers Using Orbital Sanders; Bovenzi, M., Nataletti, P. and Alessandrini, B.
3. Women Injured by Hand-Arm Vibration – Who Cares?; Bylund, S.

3:10 - 3:40 PM Break

3:40 - 5:30 PM Measurement III

1. An Investigation of the Relationship between Vibration-Induced White Finger and Power Absorption; Dong, R.G., McDowell, T.W., Welcome, D.E. and Wu, J.Z.
2. Frequency Weighting of Hand-Arm Vibration, Tominaga, Y.
3. A Pilot Study of Glove Effects on a Force Matching Method; McDowell, T.W., Dong, R.G. and Welcome, D.E.
4. Design of a New Instrumented Glove for the Measurement of the Contact Pressure Distribution at the Hand/Handle Interface; Feutry, D., Lemerle, P. and Claudon, L.
5. Analysis of Fingertip/Probe Interaction in the Vibrotactile Tests; Wu, J.Z., Dong, R.G. and Schopper, A.W.

Wednesday

8:00 - 10:00 AM Tool Design I – Focus Session

1. A Comparison of Anthropomorphic Model Responses of Human Hand-Arm Systems; Sinha, K.K. and Shanker, A.
2. Method for Assessing the Reduction of Risks of Musculo-skeletal Disorders Achieved by an Ergonomic Design of Vibrating Tools; Christ, E.
3. Modeling the Vibration Characteristics of Pneumatic Hammers; Bloxsom, W. and Reynolds, D.

10:00-10:30 Break

10:30 - 12:20 PM Tool Design II – Mechanical Impedance

1. A Comparison of Reported Mechanical Impedance Data of the Human Hand-Arm system; Dong, R.G., Warren, C. Welcome, D.E. and Wu, J.Z.
2. Evaluation of Instrumentation for Measuring Biodynamic Responses of the Hand-Arm System; Welcome, D.E., Dong, R.G., McDowell, T.W. and Wu, J.Z.
3. Mechanical Impedance Characteristics of the Hand and Arm; Moustafa, A. K. and Reynolds, D. D.
4. Influence of Hand Forces and Handle Size on Human Hand-Arm Vibration Absorbed Power; Aldien, Y., Marcotte, P., Rakheja, S., Boileau, P.E. and Boutin, J.
5. Influence of Handle Size and Shape on the Biodynamic Response of the Hand-Arm System; Marcotte, P., Aldien, Y., Boileau, P.E., Rakheja, S. and Boutin, J.

12:20 - 2:00 PM Lunch

2:00 - 3:30 PM Medical V – Blood Pressure/Blood Flow

1. The Effect of Vibration Exposure on the Function of Arteriole and Artery of the Finger; Olsen, N.
2. Effect of Vibration Magnitude and Push Force on Finger Blood Flow; Welsh, A.J.L. and Griffin, M.J.
3. Influence of Room Temperature on Finger Systolic Blood Pressure Response to Finger Cooling in Healthy Subjects; Laskar, M.S., Ohmura, K., Inoue, M., Yokoyama, K., Inagaki, J., Takahashi, Y., Mahbub, M.H., Ohnan, H. and Harada, N.
4. Effects of Impulsive Vibration on Human Red Blood Cells; Adno, H., Ishitake, T., Nieminen, K., Toppila, E. and Starck, J.

3:00 - 4:00 PM Break

4:00 - 5:50 Measurement IV

1. Use of Modern Instrument to Measure Hand-Arm Vibration; Reynolds, D. D.
2. Work Computer for Prevention of Over Exposure to Hand-Transmitted Vibration; Maeda, S.
3. A Comparison of Finger Dynamic Pressure to Tool Vibration; Wasserman, J., Wasserman, D. and Logston, D.
4. Hand-Arm Vibration Exposure from Hydraulic Tools Used in U.S. Railroad Maintenance-of-Way Track Operations; Wasserman, D.E., Wasserman, J.F., Mullinix, L. and Logsdon, D.
5. Effect of Push/Pull Force on Perception of Vibration at a Steering Wheel; Haasnoot, R. A. and Mansfield, N. J.

7:30-9:30 PM Meeting of International Organization Committee

Thursday

8:00 - 10:30 AM Legal – Focus Session

1. A Medical Assessment Process for a Large Number of Miners and Ex-Miners with Compensation Claims for Hand-Arm Vibration Syndrome; McGeoch, K.L., Lawson, I.J., Burke, F., Proud, G. and Miles, J.
2. Adjudication and Worker's Compensation of Hand-Arm Syndrome in Quebec: Unresolved problems, Turcot, A., Roy, S., Duguay, P., Massicotte, P., Boileau, P.E. and Simpson, A.
3. Hand-Arm Vibration Syndrome: An Analysis of Occupational Morbidity from a State Compensation Database; Martin, C. and Edla, S.
4. Hand-Arm Vibration Syndrome: Health Promotion, Education and Follow-up; Brown, L., Kudla, I., Wills, M. and Pelmeur, P.

10:30 - 11:00 AM Break

11:00 - 12:30 PM Measurement V

1. Magnitude Dependence of Equivalent Comfort Contours for Vertical Hand-Transmitted Vibration; Morioka, M. and Griffin, M. J.
2. Rats Will Work with Vibrating Tools: New Avenues for Animal-Based HAVS Research; Wirth, O., Lindsley, W. G., Wade, T. R., and Krajnak, K.
3. Evaluation of Finger Skin Blood Flow in Workers Exposed to Hand-Arm Vibration Using Laser Doppler Perfusion Imaging; Miyai, N., Terada, K., Tomida, K., Sakaguchi, S., Minami, Y., Yamamoto, H., Morioka, I., and Miyashita, K.
4. The Effects of Finger Force and Visual Distractions on the Measurement of Thermal Perception Thresholds; Smutz, W. P., Schopper, A. W., Welcome, D. G., Dong, R. G., and Andrew, M. E.

12:30-2:00 PM Lunch

2:00 - 3:30 PM Medical VI – Vibrotactile Thresholds

1. Reference Vibrotactile Perception Thresholds on the Fingertip Obtained with Malaysian Healthy People Using ISO 13091-1 Equipment; Daud, R., Maeda, S., Kameel, N. N. M., Ripin, M. Y., Bakrum, N., Md. Zein, R., Kido, M., and Higuchi, K.
2. Provoked Responses in Tactile Perception from Exposure to Simulated Power Tool Vibration; Peterson, D. R., Brammer, A. J., and Cherniak, M. G.
3. Effect of Handle Temperature on Temporary Threshold Shift of Fingertip Vibration Sensation Induced by Acute Vibration Exposure; Yokoyama, K., Takahashi, Y., Inoue, M., Laskar, M. S., Mahhub, M. H., Nakayama, T., Ohnari, H., and Harada, N.
4. Changes in Vibrotactile Perception with Manual Work: A Prospective Study of Forestry Workers; Brammer, A. J., Sutinen, P., Pyykko, I., Toppila, E., and Starack, J.

3:30 - 4:00 PM Break

4:00 - 5:30 PM Medical VII – Vascular/Physiology

1. Hand-Transmitted Vibration at One Hand Causes Temporary Shifts of Skin Temperatures at the Fingertips of Both Hands; Nishiyama, K. and Toada, K.
2. Changes of Peripheral Circulation by Silver Spike Point Therapy Among Workers Exposed to Hand-Arm Vibration; Sakaguchi, S., Yamamoto, H., Minami, Y., Terada, K. Tomida, K., Morioka, I., and Miyashita, K.
3. Effects of Cold-Stress Test Using Different Covering Methods on Heart Rate Variability in Healthy Subjects, Inoue, M. Suizu, K., Yoshimura, M., Shirono, S., Morita, H., Kan, H., Yamamoto, S., and Harada, N.
4. Is There a Relation Between Exposure to Hand-Arm Vibration and Myocardial Infarction?, Olofsson, B.

7:00 - 9:00 PM Reception and Gala Dinner**Friday****8:00 - 10:30 AM Prevention I – Focus Session**

1. The Revision of the Glove Vibration Isolation Standard: ISO 10819; Voss, P.
2. Development of Prevention Strategy for Hand-Arm Vibration Disorder in Japan; Yamada, S.
3. Plans for Effective Implementation of the European Vibration Directive; Nelson, C. and Brereton, P.
4. Effective Intervention with Ergonomics, Antivibration Gloves, and Medical Surveillance to Minimize Hand-Arm Vibration Hazards in the Workplace; Jetzer, T., Haydon, P., and Reynolds, D.

10:30 - 11:00 AM Break**11:00 - 12:30 PM Prevention II – Antivibration Gloves**

1. Transmissibility and Dynamic Stiffness of Glove Material and the Apparent Mass of the Hand; Boyle, M. and Griffin, M.
2. Anti- vibration Gloves Effectiveness: In Field and Laboratory Tests and Proposal for a New Standard; Nataletti, P., Lenzuni, P., Lunghi, A., Pieroni, A. and Marchetti, E.
3. Can the Measured TTS be Used as an Indicator of the Effectiveness of Anti-Vibration Gloves; Maeda, S.
4. Issues to be Considered in the Revision of ISO 10819: Wolf, E. and Reynolds, D. D.

12:30 - 2:00 PM Lunch**2:00 - 3:00 PM Round Table Discussion on Prevention****3:00 - 3:30 PM Conference Closing****Vendor Exhibits**

Manufacturers of equipment designed for vibration measurements, protective clothing, and antivibration tools will display their products during the conference.

Conference Registration

Please use the accompanying Microsoft Word file when registering and mail, fax, or email the completed registration form to the addresses shown below.

Registration Deadline

Deadline for taking advantage of reduced registration fees:

30 April 2004

Registration forms must be sent to the following address:

HAVC 2004

3939 Briarcrest Court

Las Vegas, NV 89120-1305, USA

or faxed to:

1 702 454 0085

or emailed to:

lkr@fremont.vegasnet.org

Registration Fees

	Before 30 April 2004	After 30 April 2004
Conference Delegates	\$590 (US)	\$643 (US)
Accompanying Persons	\$130 (US)	\$180 (US)

Registration Fees for Delegates Covers:

- Conference Abstracts and Proceedings
- Access to all Scientific Sessions
- Poolside Welcoming Party (Monday Evening) and Gala Dinner (Thursday Evening)
- CMEST Laboratory Tour
- Lunches and Break Refreshments (Monday-Friday)

Registration Fee for Accompanying Persons Covers:

- Poolside Welcoming Party (Monday Evening) and Gala Dinner (Thursday Evening)
- CMEST Laboratory Tour

Payment

Payments must be made in US Dollars by one of the following methods:

1) Credit Card:

VISA or MASTERCARD (We do not have a secure Web Site. If paying by VISA or MASTERCARD, please fax the following information to 1 702 454 0085: type of card; name that appears on card, expiration date, amount to be charged to card.)

2) Bank Check

Make checks payable in **US Dollars** to **HAVC 2004** and mail to Linda Reynolds.

Confirmation

A letter of confirmation will be sent upon receipt of registration form and payment.

Hotel Registration

All activities associated with the 10th International Conference on Hand-Arm Vibration will be held at the Flamingo Hilton Hotel & Casino, 3555 S. Las Vegas Blvd., Las Vegas, Nevada. The hotel has a wildlife habitat and a 15-acre Caribbean-style water playground. A block of 160 rooms has been reserved for the conference at the following guaranteed room rates: Sun-Thurs - \$85/Fri-Sat - \$119. These group rates will apply from June 3 through June 15. Rooms will be reserved on a first-come-first-serve basis. To receive these room rates, rooms must be reserved before 7 May 2004.

Hotel room reservations must be made directly with the Flamingo Hilton. Reservations can be made by calling the Flamingo Hilton reservation number **1 800 835 5686**. We have a block of rooms reserved for the 10th International Conference on Hand-Arm Vibration. When calling, request the group rate for the Hand-Arm Vibration Conference. Room reservations must be made by May 7, 2004. Unused rooms in our block will be released on this date.

The check-in time for rooms is 3:00 PM, and the check-out time is 12:00 PM. The Flamingo Hilton has a check-in desk at the McCarran International Airport adjacent to luggage pickup.

Registration and Hotel Cancellation

Registration Cancellation

Conference registration cancellations must be received by **16 April 2004**. A \$50 cancellation fee will be charged. No refunds will be given after **16 April 2004**. Requests for registration cancellations must be sent to Linda REYNOLDS, Secretariat Conference HAV 2004.

Cancellation of Hotel Reservation

The Flamingo Hilton Hotel & Casino room cancellation policy applies.

Social Program

There are two social events planned for the conference:

- Poolside Welcoming Party on Monday Evening, 7 June.
- Gala Dinner with Entertainment on Thursday Evening, 11 June.

The Flamingo Hilton has a 15-acre Caribbean-style water playground. Las Vegas is the Entertainment Capital of the World with many easily accessible local areas of interests and evening entertainment venues. Therefore, conference delegates and accompanying persons will be free to choose their own non-conference social activities.

Registration Form
(please type or print)

10th International Conference on And-Arm Vibration
June 7 -11, 2004
Las Vegas, Nevada USA

First Name _____ Last Name _____

Organization/Company _____

Mailing address _____

City _____ Postal/Zip code _____

Country _____ E-mail _____

Telephone _____ Fax _____

Number of accompanying persons _____

Name(s) _____

Transport/arrival and departure dates:

Plane _____

Arrival
Day _____ Time _____
(mm/dd/yy)

Car _____

Departure
Day _____ Time _____
(mm/dd/yy)

Conference Registration Fees

Before April 30, 2004

May 1 - June 7, 2004

Delegate \$590 USD \$643 USD _____

Accompanying person(s) \$130 USD \$180 USD _____

Total =====

Lunches (for delegates only, included in registration fee)

Mon. 6/7 _____ **Tues. 6/8** _____ **Wed. 6/9** _____ **Thurs. 6/10** _____ **Fri. 6/11** _____

Dinners (for delegates and accompanying persons, included in registration fee)

Monday evening, 7 June Pool Party and Western Bar-B-Que Yes___ No___ No. of persons _____

Thursday evening, 10 June Gala dinner w/entertainment Yes___ No___ No. of persons _____

Methods of payment:

Credit Card: ___VISA ___MASTERCARD Name of Cardholder _____

Card No. _____ Expiration Date _____

Bank or postal cheque payable to HAVC 2004 in U.S. Dollars

Please return this registration form to: HAVC 2004, 3939 Briarcrest Court, Las Vegas, NV 89120-1305, USA
or Fax to: 1-702-454-0085 or Email to: lkr@fremont.vegasnet.org
Telephone 1-702-458-1681